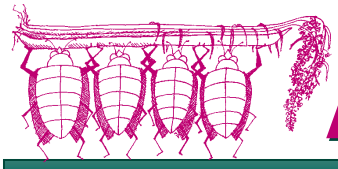
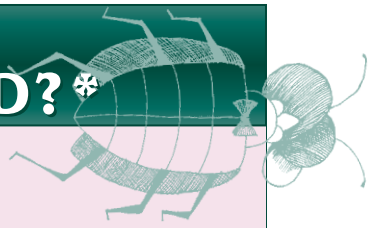


ACTIVITY 4 GRADES 6-12

IS OUR SCHOOL IN LOOSESTRIFE LAND?*



Objectives

➡ **Students will locate and map the area where they attend school, showing any presence of purple loosestrife.**

Time Requirement

1 initial class period and later time to review homework.

Wisconsin Model Environmental Education and Science Standards

Environmental Education: **A.4.1, A.4.2, A.8.4, C.8.2, E.12.3.**
Science**: C.8.8.**

DESCRIPTION

Students locate stands of purple loosestrife near their school.

PROBLEM

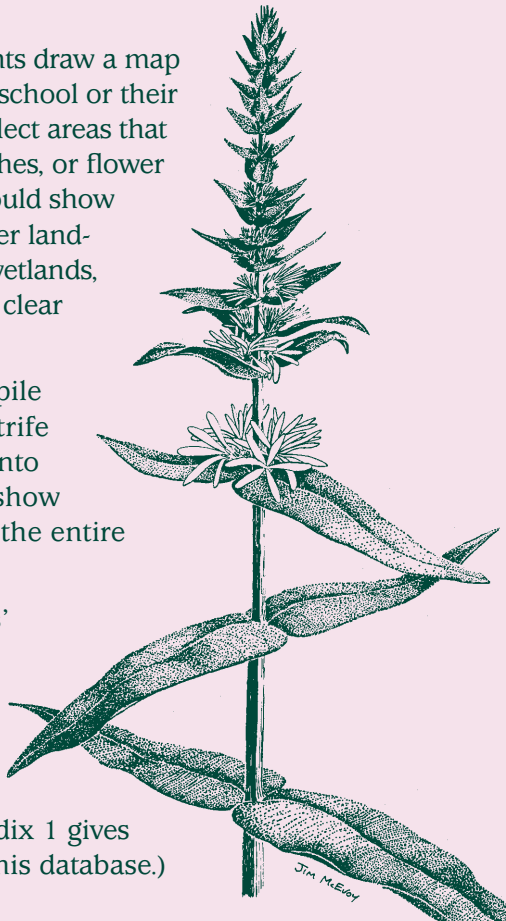
Is purple loosestrife a problem in our area?

MATERIALS

- ❑ Drafting supplies: rulers, pens, pencils, drawing paper.
- ❑ Local area maps, drawn to different scales. County plat maps and the *Wisconsin Atlas and Gazetteer* (Yarmouth, Maine: DeLorme Publishing) are recommended. You can produce custom maps from the DNRs on-line mapping site (http://gomapout.dnr.state.wi.us/dnrwebview/)
- ❑ Pictures of purple loosestrife and other look-alike plants.

PROCEDURES

1. Have each pair of students draw a map of a small area near the school or their homes, taking care to select areas that have wetlands, road ditches, or flower gardens. Their maps should show roads, buildings and other landmarks, waterways and wetlands, purple loosestrife, and a clear scale and legend.
2. Have the students compile all of the purple loosestrife data from their maps onto at least two maps that show the collective area that the entire class surveyed.
3. Compare your students' results with the data that are posted on the map that you can view at http://www.glifwc-maps.org (Note: Appendix 1 gives instructions for using this database.)



Activity 4. IS OUR SCHOOL IN LOOSESTRIFE LAND?

R. QUEEN

D. BLUMER

Purple loosestrife often can be found near our homes and schools. Mapping the location of loosestrife raises awareness of this invasive plant.

4. Assign the students to contact the landowners in places where purple loosestrife is growing on their property. Have them provide landowners with information about this invasive exotic species. *Note*: Use caution regarding asking young students to contact landowners regarding their land.

BACKGROUND INFORMATION

Appendix 1 contains a map of Wisconsin from a mid-1980s purple loosestrife survey. This map provides a general idea about where purple loosestrife is the most serious problem in the state. The appendix also includes instructions on how to access a website that identifies most known purple loosestrife locations in the state. Many purple loosestrife sites remain unknown, but these resources show how ubiquitous the plant is around Wisconsin.

It is critical that someone in every area learn about where the plant is invading wetlands. That's a project you and students can undertake that would be both a great exercise in mapping and useful in local management. In fact, any sites you locate can and should be added to the website database. Knowing about your sites also lays groundwork for local control efforts, which you can begin by rearing and releasing biological control beetles with your students.

STUDENT ASSESSMENT

Evaluate the students' drawings by making sure that each map has a clear scale and legend that includes each type of feature shown on the map. Evaluate each drawings accuracy by comparing it to the professional maps that the class uses.

Have students use the scales on the different maps to estimate how far away from the school or their homes purple loosestrife is growing.

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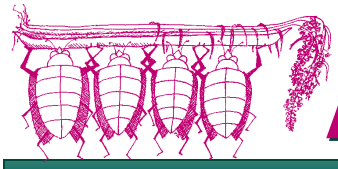
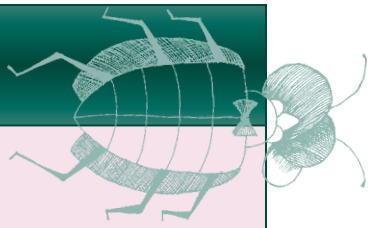
* Revised with permission from "Is Purple Loosestrife a Problem Near Our School?" in *The Purple Loosestrife Project Cooperator's Handbook*.



APPENDIX 1

History and Distribution of Purple Loosestrife in Wisconsin



HISTORY AND DISTRIBUTION

The earliest confirmed report of purple loosestrife (*Lythrum salicaria*) in North America was in 1814, in wet meadows in Canada and the northeastern United States, though it probably arrived much earlier. It was probably first introduced from Europe and Asia as a contaminant in ship ballast and quickly established along the eastern seaboard. Canal construction evidently allowed it to move inland quickly. Expansion up the St Lawrence contributed to its move westward into the upper Great Lakes between the late 1890s and early 1900s. Maps in 1900 place it both in the Upper Peninsula of Michigan and Chicago. Use by the horticultural trade and beekeepers facilitated the geographical spread of purple loosestrife.

The plant made it into Wisconsin by the 1920s or earlier and was being used in gardens then. At about that time, purple loosestrife was being recognized as a pest in the East. Purple loosestrife became naturalized in the state, but was present at very low numbers for many years. By 1940, herbarium records show that purple loosestrife occurred in several locations around southeastern Wisconsin. By 1980, purple loosestrife had spread throughout the state. Stuckey (1980) believed that the plant typically becomes common and problematic 20-40 years after initial establishment.

By the early 1980s, purple loosestrife was recognized as a major problem in the Midwest and a developing concern among Wisconsin professionals and citizens. Though most state wetlands were still free of the plant and most populations were small, purple loosestrife had firmly established itself in large numbers throughout Waukesha and eastern Jefferson Counties, Horicon Marsh, Crex Meadows, and the Fox River Valley, especially in the Green Bay area. A newly established Purple Loosestrife Task Force developed a campaign to map locations of infestations, educate others about the problem, correspond with nearby states on the matter, and push legislative action against trade and cultivation of the plant.

R. QUEEN

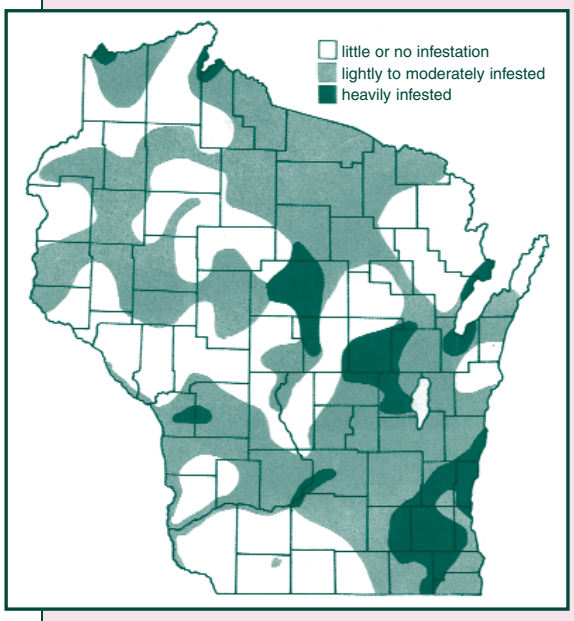
In the mid- to late 1980s, the Wisconsin DNR undertook a statewide census of purple loosestrife locations. Though never completed, the census resulted in most of the location information currently known. The census produced the map depicted in **Figure A.1-1**. These data confirmed the severity of the problem in the above areas and revealed additional "hot spots," including the central, and parts of the lower, Wisconsin River valley, the LaCrosse area, the Wolf River region, and the Superior and Ashland areas along Lake Superior.

Appendix 1.

Given early location information it seems likely that purple loosestrife first entered the state in the southeast corner and later in the Northwest, especially through transport by Great Lakes shipping, gardeners, and possibly beekeepers. The worst areas of infestation are still around river systems and shipping terminals near Milwaukee, Green Bay, and our Lake Superior ports.

Purple loosestrife is now found in large numbers in central and western drainages in the state where disturbance has been high. It is likely that loosestrife seeds have been spread far and wide by people, animals, wind, and water. Purple loosestrife numbers have been increasing more recently in many wetlands throughout the state, but especially in areas where wetlands are most plentiful and heavily visited, namely along northwestern rivers, such as the Yellow, Namekagen, and St. Croix, and in the Northern Highland lakes area of north central Wisconsin.

Purple loosestrife has now been reported from every county in the state and it is apparent that no wetland anywhere in Wisconsin is safe from infestation, regardless of surface drainage connections to other infested areas. The small size and large quantities of seed, the ease with which people can move loosestrife fragments on vehicles, other machinery, and footwear, and the fact that birds have been documented carrying it in mud on their toes, virtually assure that every wetland is likely to receive this invader. There is also still a problem with gardeners using and sharing purple loosestrife plants.



Unfortunately, the current status of purple loosestrife in the state is unclear, though it has obviously expanded in the vast majority of areas where it was found by the 1980s Wisconsin DNR survey. Work is now going on to update these data and make them available to the public. As a start, these data, combined with some more recent location information, are now collected in a geographic information system (GIS) and made available on an Internet web site set up by the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) at **www.glifwc-maps.org**. (Directions for accessing and using the web site follow at the end of this appendix.)

Figure A.1-1. Purple loosestrife distribution in Wisconsin (based on 1988 Wisconsin DNR data).

Appendix 1. *(continued)*

The Wisconsin Wetlands Association (WWA), GLIFWC, Wisconsin DNR, and University of Wisconsin-Extension have agreed to continue updating this information and, with funding from the Wisconsin Coastal Management Program and private sources, began to do so in the summer of 2002. More than 130 volunteers were trained to conduct a survey of loosestrife locations in Wisconsin's coastal counties. The survey used a systematic coverage of roads (and waterways where volunteers were able). WWA directed the survey and now plans to enhance and expand the survey effort to cover all of the state more thoroughly over the next several years. Many more volunteers in all counties will be needed for this effort. Please contact WWA (608-250-9971), if you are interested in participating. Statewide cooperators who raise and release beetles with the Wisconsin DNR's Purple Loosestrife Bio-Control Project are also helping in the effort by reporting observed loosestrife infestations. All citizens are encouraged to report sites by writing or calling the project office at 1350 Femrite Drive, Monona, WI 53716 or **Brock.Woods@dnr.state.wi.us** or 608-221-6349.

Reference: Stuckey, R. 1980. Distributional history of *Lythrum salicaria* (purple loosestrife) in North America. *Bartonia* 47:3-20.

INSTRUCTIONS FOR USING GLIFWC'S PURPLE LOOSESTRIFE WEB SITE

This Internet web site is the key to finding many purple loosestrife infestations Wisconsin. The site includes all of the Wisconsin DNR's 1980s survey sites, as well as many newly identified sites. It is the easiest way to find a local source of purple loosestrife rootstocks required for rearing *Galerucella* beetles and sites with suitable characteristics for releasing those beetles. Unfortunately, many loosestrife sites remain unknown to Wisconsin DNR and GLIFWC and therefore are not shown on the map. If you know of any such sites, please report them. WWA survey sites will be added as they are found.

Some *Galerucella* beetle release sites are also located on the map. Most sites from the Wisconsin DNR and GLIFWC and some cooperator sites are shown; however, many of the latter are not because cooperators have not yet submitted their release site data to Wisconsin DNR. This information is important for estimating where the bio-control need is greatest, as well as identifying where collectable *Galerucella* beetles may be found for future local rearing efforts. If you know of unreported sites please report them or encourage the appropriate cooperator to do so.

Appendix 1.

To use the map, locate a purple loosestrife site its by proximity to familiar roads, lakes, watercourses, etc., then bring up detailed written information, including location, for the site, as outlined below. Release sites may have instigator contact information listed.

1. Access the web site at **www.glifwc-maps.org** and the map by scrolling down to and clicking on "Purple Loosestrife Distribution and Control."
2. The site opens with the top icon ("zoom in") of the left-hand vertical list highlighted with a red box. Simply click on an area of particular interest to zoom in. (If this does not work, first click on the "zoom in" icon on the left side of the page. Note there is also a "zoom out" icon that you must highlight to zoom out.)
3. If the level of detail is not fine enough to select an individual site, click again to zoom in further until you find a site of interest.
4. Click on the "information" icon (fourth from the bottom at left) to highlight location data for a point on the map.
5. Click on the point you want the information for and it should appear across the top of the screen.
6. Read the data for the site in the box at the top of the page. The original data are usually township, range, section and, sometimes, quarter section* information and can be used to identify the specific area on any U.S. Geological Survey topographic map or in the *Wisconsin Atlas and Gazetteer*. (Data with latitude and longitude coordinates may be original or may have been added later for some points. These can also be used to locate sites on maps.)

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* Wisconsin is divided into townships that are approximately square and 6 miles on each side, labeled by township numbers running north and south, and range numbers running east and west. Thus, "R" numbers along the bottom of a map show range (e.g., R 12 E) and "T" numbers along the sides of a map show townships (e.g., T 16 N). Find the township that intersects both these numbers, given in the bottom box of data for any area, and you will identify the township where that area is found. Each township is divided into 36 1-mile squares, called sections, and numbered from 1 to 36, starting from 1 in the upper right corner of the township and ending with 36 in the lower right corner. The section number identifies which of these contains the plants. If a quarter section is also identified, it will be the area of that section with the plants. The finest resolution of this township/range system is a quarter section, or about 160 acres. To determine the exact location of the loosestrife, find a likely local map location therein and explore it on foot. In the future, sites should be located with latitude/longitude data that are more exact and easier to use with Geographic Positioning System (GPS) units.

EXAMPLE: Site #19872329 is at "26N6E19" and "NE". This means the site is in Township 26 North, Range 6 East, Section 19, in the northeast quarter of that section. (Note additional site details are also given.)